PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

United States Patent and Trademark Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 16 April 1997 (16.04.97)	
International application No. PCT/NL96/00323	**Applicant's or agent's file reference** BO 40798
International filing date (day/month/year) 16 August 1996 (16.08.96)	**Priority date** (day/month/year) 17 August 1995 (17.08.95)
Applicant ARONHIME, Marc et al	

1. The designated Office is hereby notified of its election made:

   [X] in the demand filed with the International Preliminary Examining Authority on:

   10 March 1997 (10.03.97)

   [ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

   [ ] was not

   made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

N. Fischer

Telephone No.: (41-22) 730.91.11

PATENT COOPERATION TREA[illegible]

PCT

NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

DE BRUIJN, Leendert, C.
Nederlandsch Octrooibureau
Scheveningseweg 82
P.O. Box 29720
NL-2502 LS The Hague
PAYS-BAS

Date of mailing (day/month/year) 16 September 1997 (16.09.97)	
Applicant's or agent's file reference BO 40798	**IMPORTANT NOTIFICATION**
International application No. PCT/NL96/00323	**International filing date** (day/month/year) 16 August 1996 (16.08.96)

1. The following indications appeared on record concerning:

[X] the applicant [X] the inventor [ ] the agent [ ] the common representative

Name and Address	State of Nationality	State of Residence
LANDA, Benny 10010 117th Street Edmonton, Alberta T5K 1Y8 Canada	CA	CA
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

[ ] the person [ ] the name [X] the address [ ] the nationality [X] the residence

Name and Address	State of Nationality	State of Residence
LANDA, Benny 26 Itamar Ben Avi Street Kfar Aharon Nes Ziona 74051 Israel	CA	IL
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

[X] the receiving Office
[ ] the International Searching Authority
[X] the International Preliminary Examining Authority
[ ] the designated Offices concerned
[X] the elected Offices concerned
[ ] other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Peggy Steunenberg
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

ENT COOPERATION TREA

From the INTERNATIONAL BUREAU

PCT

COMMUNICATION OF
INTERNATIONAL APPLICATIONS

(PCT Article 20)

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as designated Office

Date of mailing:
03 April 1997 (03.04.97)

The International Bureau transmits herewith copies of the international applications having the following international application numbers and international publication numbers:

International application no.:	International publication no.:
PCT/NL96/00323	WO97/07433

CORRECTED VERSION
VERSION CORRIGEE

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

Authorized officer:

J. Zahra
Telephone No.: (41-22) 730.91.11

PATENT COOPERATION TREATY

PCT

REC'D 01 DEC 1997
WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
BO 40798		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/NL 96/ 00323	16/08/1996	17/08/1995
International Patent Classification (IPC) or national classification and IPC		
G03G15/16		
Applicant		
INDIGO N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consists of a total of 8 sheets.

3. This report contains indications and corresponding pages relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☒ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
10/03/1997	27.11.97
Name and mailing address of the IPEA/	Authorized officer
European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	K.P. Hiltner Telephone No. 2399 - 2198

Intern. application No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT/NL96/00323

I. Basis of the report

1. This report has been drawn up on the basis of (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

[ ] the international application as originally filed.

[x] the description, pages 1 - 29, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____,

[x] the claims, Nos. _____, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. 1 - 65, filed with the letter of 11.11.97,
Nos. _____, filed with the letter of _____,

[x] the drawings, sheets/fig 1/4 - 4/4, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:
[ ] the description, pages _____.
[ ] the claims, Nos. _____.
[ ] the drawings, sheets/fig _____.

3. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

[ ] restricted the claims.
[x] paid additional fees.
[ ] paid additional fees under protest.
[ ] neither restricted nor paid additional fees.

2. [ ] This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
[ ] complied with.
[x] not complied with for the following reasons:

The application consists of five parts:

Subject matter A:
covered by independent claims 1, 46 and 65

directed to the production of a multi-layered image transfer member. Claims 2 to 28 and claim 47 are dependent thereon.
The image transfer member of claim 1 is made by a lamination process according to claim 46. Claim 65 is directed to a part of the image transfer member.

Subject matter B:
covered by independent claim 29

directed to a special release layer on the image transfer member.
Claims 30 to 45 are dependent thereon.

Subject matter C:
covered by independent claim 48

directed to facilitate paper removal in the presence of a conforming layer.
Claims 49 to 57 are dependent thereon.

Subject matter D:
covered by independent claims 58, 60, 61

directed to a device with a base layer formed of substantially non-compliant material
Claims 59 and 62 are dependent thereon.

Subject matter E:
covered by independent claim 63

directed to a resilient member of special functional length. Claim 64 is dependent thereon.

The requirement of Rule 13.1 PCT is not fulfilled since there can not be found a technical relationship among subject matters A,B,C,D,E involving one or more of the same or corresponding special technical features in the sense of Rule 13.2 PCT.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

[ ] all parts.
[x] the parts relating to claims Nos. 1 to 57, 65 (parts A, B, C)_____.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 1 - 57, 65	YES
	Claims	NO
Inventive Step (IS)	Claims 1 - 47, 51 - 57, 65	YES
	Claims 48 - 50	NO
Industrial Applicability (IA)	Claims 1 - 57, 65	YES
	Claims	NO

2. CITATIONS AND EXPLANATIONS

1. part A:--

In (D1) US-A-5 110 702, in particular Fig. 2, a multi-layered transfer roller 10A is disclosed to transfer a toner image from an element 27 to a receiver sheet 62. The image transfer portion 23 is a low surface energy layer which is always attached to the roller and can not hint at the subject matter of present claims 1 and claim 46 wherein the image transfer portion 104 is transferred from the carrier substrate 200 to the body portion 116.
The carrier sheet of present claim 65 would not be compared by the skilled person to a rigid roller 10A of said US-document.
In (D2) EP-A-0 584 893 an intermediate transfer member (70 in Fig. 2) is disclosed which is supported by a flexible belt, and a multi-layered intermediate transfer member (82 in Figs. 3A, 3B) supported by a drum. The back surface thereof is releasable from the drum, see tensioning mechanism 84 in Fig. 3A. However, the skilled

person would assume that in the Fig. 2 embodiment the belt 70 is not split into a carrier sheet and a releasable sheet.
Also (D3) JP-A-62-293 270 does not disclose a member containing (i) a carrier sheet and (ii) an image transfer arrangement whereby (iI) is releasable from (i), the multi-layered belt of D3 is a unitary image transfer member.

2. Part B:--

The outer release layer of the image transfer member of claim 29 is of a condensation type silicone.
In D2 the outer release layer (110 or 126) is of silicone rubber, such as Syl-Off 294 and Syl-off 297, see page 8, lines 26, 27 and step V on page 10. However it seems that Syl-off 294 and Syl-off 297 are not condensation type silicone materials.

(D4) EP-A-0 399 186 has been cited in the ISR against part B. The intermediate transfer roller in Fig. 2 thereof has an elastic layer 51 consisting of a rubber layer 54 and an outer electrically conductive silicone rubber layer 53, see col.6, lines 26-31 and col.8, line 23. A special silicone rubber for the type is not suggested.

3. Part C:--

According to claim 48, a conforming layer is provided beneath the image receiving surface, comprising sublayers each of low Shore A hardness.

The image transfer member disclosed in D2, Fig. 3B comprises, beneath the release layer 110, several conforming layers of low hardness such as layer 106 and 104. Since these layers are said to be of rubber and sponge

(see page 8, lines 18, 19) and have the same function as in the present application, ie complete image transfer to the intermediate transfer member and easy removal of the final image carrier from the outer surface, the hardness of these layers would be appropriately chosen by the skilled person. If he measured their hardnesses, they would evidently be in the very broad range claimed, ie below 80 Shore-A for each of the known sub-layers. Soft layers of a hardness below 70 and 60 Shore-A are also common in this art.
Claims 48 to 50 infringe Art. 33(3) PCT.

(D5) US-A-4 112 841 has also been cited in the ISR against part C.
In Fig.8 thereof a lithographic printing master comprising a resilient layer 2 is shown having a Shore A hardness between 30 and 80, see col.6, line 48. Although the exposed and inked printing master transfers images to paper, it is assumed that the image transfer members of the present application are in a different technical filed, so that the person skilled would not look into the prior art in lithography.

(D6) EP-A0 399 794 has also been cited in the ISR against part C.
In Fig. 4 thereof some belt types having sublayers of specific Shore-A hardnesses are disclosed. Although belt 5 transfers images between a hot location 20 and a cold location 10, this belt is not an image transfer member in the sense of the present application, see section VIII of this Report.

4. The industrial applicability of means and methods for producing electrostatic images according to the claims is evident, Art. 33(4) PCT can not be disputed.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 48 is not clear for the two following reasons; Art. 6 PCT is therefore infringed.

1. An image transfer member covers all members transferring images from one pace to another or from one member tro another member. The precise meaning in the present context is to be defined.

2. The transfer surface of the image transfer member should be adapted to receive images. It is not clear whether this transfer surface is the release surface mentioned in the following feature.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
BO 40798		
International application No.	International filing date (day/month/year)	(Earliest) Priority Date (day/month/year)
PCT/NL 96/00323	16/08/1996	17/08/1995
Applicant		
INDIGO N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. [ ] **Certain claims were found unsearchable** (see Box I).

2. [X] **Unity of invention is lacking** (see Box II).

3. [ ] The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
   - [ ] filed with the international application.
   - [ ] furnished by the applicant separately from the international application,
     - [ ] but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
   - [ ] Transcribed by this Authority

4. With regard to the **title,**
   - [X] the text is approved as submitted by the applicant.
   - [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   - [ ] the text is approved as submitted by the applicant.
   - [X] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is:
   Figure No. 3
   - [ ] as suggested by the applicant.
   - [X] because the applicant failed to suggest a figure.
   - [ ] because this figure better characterizes the invention.
   - [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NL 96/ 00323

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

CLAIMS : 1,45,64 and dependent claims 2-28,46
CLAIMS : 29, dependent claims 30-44
CLAIMS : 47, dependent claims 48-56
CLAIMS : 57,59,60,62 and dependent claims 58,61,63

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searches without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

A multi-layered image transfer blanket (100) and a method of producing same, including a body portion (116) and an image transfer portion (104), the image transfer portion (104) having an image transfer surface and a back surface, comprising forming the image transfer portion (104) on a carrier substrate (200) and transferring the image transfer portion onto the body portion (116) such that the back surface of the image transfer portion faces the body portion. Preferably, the image transfer portion is formed on the carrier substrate such that the back surface of the image transfer portion faces the carrier substrate.

INTERNATIONAL SEARCH REPORT

[redacted] ational Application No
[redacted]CT/NL 96/00323

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G03G15/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G03G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 227 850 A (SATO YOSHIMITSU ET AL) 13 July 1993 see column 1, paragraph 1; figures 1-3 see column 9, line 3 - column 10, line 25 ---	57,59, 60,62 58,61,63
X A	EP 0 584 893 A (INDIGO N V) 2 March 1994 cited in the application see page 3, paragraph 1; figures 1-4 see page 7, line 16 - page 8, line 27 see page 5, line 37 - page 7, line 1 see page 9, line 35 - page 10, line 45 --- -/--	29 1,4,11, 13,20, 30-34, 41, 45-47,64

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

2

Date of the actual completion of the international search	Date of mailing of the international search report
13 February 1997	26.02.97
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Greiser, N

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 110 702 A (NG YEE S ET AL) 5 May 1992 see column 1, line 13 - line 17; figures 2,3 see column 1, line 60 - column 2, line 54 see column 7, line 31 - column 8, line 2	1 58,61
X	PATENT ABSTRACTS OF JAPAN vol. 012, no. 185 (P-710), 31 May 1988 & JP 62 293270 A (FUJITSU LTD), 19 December 1987, see abstract	1
A	US 4 112 841 A (DESHPANDE NARAYAN V) 12 September 1978 see column 1, line 8 - column 2, line 2; claim 1; figure 9 see column 3, line 65 - column 5, line 13	47-56
A	EP 0 399 186 A (SEIKO EPSON CORP) 28 November 1990 see claims 1-7; figures 2,6,10 see column 7, line 26 - column 9, line 17 see column 11, line 12 - line 41	29-35
A	US 4 093 487 A (GAWOROWSKI ANDREW J ET AL) 6 June 1978 see column 1, paragraph 1 - paragraph 2; figures 1-3 see column 2, line 43 - column 3, line 60	1,4,45, 46,64
A	EP 0 399 794 A (DELPHAX SYSTEMS) 28 November 1990 see column 1, paragraph 1; figures 1,2,4 see column 4, line 8 - line 38 see column 7, line 40 - column 9, line 1 see column 9, line 22 - line 36	47,58,61
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 341 (P-1565), 28 June 1993 & JP 05 046037 A (TOYO INK MFG CO LTD), 26 February 1993, cited in the application see abstract	57,59,60
A	US 3 983 287 A (GOOSSEN CHARLES G ET AL) 28 September 1976 see column 1, paragraph 1 - paragraph 2; figure 1 see column 2, line 42 - line 68 see column 4, line 50 - column 6, line 2	1,45

-/--

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,A	WO 96 11426 A (INDIGO NV ;GAZIT ALON (IL); IDAN DAVID (IL); INBAR HANNI (IL); KAN) 18 April 1996 cited in the application see page 1, paragraph 1; claims 1-3; figures 1-4 see page 20, line 3 - page 25, line 21	1,64

2

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-5227850	13-07-93	JP-A- 4156556	29-05-92
EP-A-0584893	02-03-94	US-A- 5089856	18-02-92
		US-A- 5047808	10-09-91
		CA-A- 2064816	15-02-91
		DE-D- 69027777	14-08-96
		EP-A- 0487530	03-06-92
		JP-T- 4507148	10-12-92
		WO-A- 9103006	07-03-91
		US-A- 5335054	02-08-94
		US-A- 5497222	05-03-96
		CA-A- 2064848	15-02-91
		DE-D- 69013000	03-11-94
		DE-T- 69013000	04-05-95
		EP-A- 0486534	27-05-92
		HK-A- 137595	08-09-95
		JP-T- 4507303	17-12-92
		WO-A- 9103007	07-03-91
		US-A- 5276492	04-01-94
US-A-5110702	05-05-92	NONE	
US-A-4112841	12-09-78	DE-A- 2633694	17-02-77
		FR-A- 2319499	25-02-77
		JP-A- 52020102	15-02-77
		NL-A- 7608589	03-02-77
		US-A- 4114535	19-09-78
EP-A-0399186	28-11-90	JP-A- 2264280	29-10-90
		JP-A- 3154085	02-07-91
		DE-D- 69014407	12-01-95
		DE-T- 69014407	11-05-95
US-A-4093487	06-06-78	GB-A- 1567872	21-05-80
EP-A-0399794	28-11-90	US-A- 5012291	30-04-91
		CA-A- 2016349	23-11-90
		DE-D- 69017514	13-04-95
		DE-T- 69017514	03-08-95
		JP-A- 4298777	22-10-92

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0399794		US-A- 5103263	07-04-92
US-A-3983287	28-09-76	NONE	
WO-A-9611426	18-04-96	AU-A- 2578495	02-05-96

PATENT COOPERATION TREATY

PCT

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
DE BRUIJN, Leendert C
NEDERLANDSCH OCTROOIBUREAU
Postbus 29720
Scheveningseweg 82
NL-2502 LS The Hague
PAYS-BAS

preliminary examination report
rapporteren aan cliënt:
27/12/97
termijn omzetten in regionale fase:
17/12/98

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

	Date of mailing *(day/month/year)* 27. 11. 97
Applicant's or agent's file reference BO 40798	IMPORTANT NOTIFICATION

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/NL 96/00323	16/08/1996	17/08/1995

Applicant

INDIGO N.V. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	J. M de Caevel Telephone No. 25.57.

Form PCT/IPEA/416 (July 1992) P20473 (14/03/1997)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
BO 40798		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/NL 96/00323	16/08/1996	17/08/1995
International Patent Classification (IPC) or national classification and IPC		
G03G15/16		
Applicant		
INDIGO N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consists of a total of 8 sheets.

3. This report contains indications and corresponding pages relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☒ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
10/03/1997	27.11.97
Name and mailing address of the IPEA/	Authorized officer
European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	K.P. Hiltner Telephone No. 2399-2198

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

PCT/NL96/00323

I. Basis of the report

1. This report has been drawn up on the basis of (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

[ ] the international application as originally filed.

[x] the description, pages 1 - 29_____, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,
pages _____, filed with the letter of _____,

[x] the claims, Nos. _____, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. 1 - 65_____, filed with the letter of 11.11.97,
Nos. _____, filed with the letter of _____,

[x] the drawings, sheets/fig 1/4 - 4/4_____, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,
sheets/fig _____, filed with the letter of _____.

The amendments have resulted in the cancellation of:

[ ] the description, pages _____.
[ ] the claims, Nos. _____.
[ ] the drawings, sheets/fig _____.

3. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

[ ] restricted the claims.
[x] paid additional fees.
[ ] paid additional fees under protest.
[ ] neither restricted nor paid additional fees.

2. [ ] This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
[ ] complied with.
[x] not complied with for the following reasons:

The application consists of five parts:

Subject matter A:
covered by independent claims 1, 46 and 65

directed to the production of a multi-layered image transfer member. Claims 2 to 28 and claim 47 are dependent thereon.
The image transfer member of claim 1 is made by a lamination process according to claim 46. Claim 65 is directed to a part of the image transfer member.

Subject matter B:
covered by independent claim 29

directed to a special release layer on the image transfer member.
Claims 30 to 45 are dependent thereon.

Subject matter C:
covered by independent claim 48

directed to facilitate paper removal in the presence of a conforming layer.
Claims 49 to 57 are dependent thereon.

Subject matter D:
covered by independent claims 58, 60, 61

directed to a device with a base layer formed of substantially non-compliant material
Claims 59 and 62 are dependent thereon.

Subject matter E:
covered by independent claim 63

directed to a resilient member of special functional length. Claim 64 is dependent thereon.

The requirement of Rule 13.1 PCT is not fulfilled since there can not be found a technical relationship among subject matters A,B,C,D,E involving one or more of the same or corresponding special technical features in the sense of Rule 13.2 PCT.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

[ ] all parts.
[x] the parts relating to claims Nos. 1 to 57, 65 (parts A, B, C)_____.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 1 - 57, 65	YES
	Claims	NO
Inventive Step (IS)	Claims 1 - 47, 51 - 57, 65	YES
	Claims 48 - 50	NO
Industrial Applicability (IA)	Claims 1 - 57, 65	YES
	Claims	NO

2. CITATIONS AND EXPLANATIONS

1. part A:--

In (D1) US-A-5 110 702, in particular Fig. 2, a multi-layered transfer roller 10A is disclosed to transfer a toner image from an element 27 to a receiver sheet 62. The image transfer portion 23 is a low surface energy layer which is always attached to the roller and can not hint at the subject matter of present claims 1 and claim 46 wherein the image transfer portion 104 is transferred from the carrier substrate 200 to the body portion 116.
The carrier sheet of present claim 65 would not be compared by the skilled person to a rigid roller 10A of said US-document.
In (D2) EP-A-0 584 893 an intermediate transfer member (70 in Fig. 2) is disclosed which is supported by a flexible belt, and a multi-layered intermediate transfer member (82 in Figs. 3A, 3B) supported by a drum. The back surface thereof is releasable from the drum, see tensioning mechanism 84 in Fig. 3A. However, the skilled

person would assume that in the Fig. 2 embodiment the belt 70 is not split into a carrier sheet and a releasable sheet.
Also (D3) JP-A-62-293 270 does not disclose a member containing (i) a carrier sheet and (ii) an image transfer arrangement whereby (iI) is releasable from (i), the multi-layered belt of D3 is a unitary image transfer member.

2. Part B:--

The outer release layer of the image transfer member of claim 29 is of a condensation type silicone.
In D2 the outer release layer (110 or 126) is of silicone rubber, such as Syl-Off 294 and Syl-off 297, see page 8, lines 26, 27 and step V on page 10. However it seems that Syl-off 294 and Syl-off 297 are not condensation type silicone materials.

(D4) EP-A-0 399 186 has been cited in the ISR against part B. The intermediate transfer roller in Fig. 2 thereof has an elastic layer 51 consisting of a rubber layer 54 and an outer electrically conductive silicone rubber layer 53, see col.6, lines 26-31 and col.8, line 23. A special silicone rubber for the type is not suggested.

3. Part C:--

According to claim 48, a conforming layer is provided beneath the image receiving surface, comprising sublayers each of low Shore A hardness.

The image transfer member disclosed in D2, Fig. 3B comprises, beneath the release layer 110, several conforming layers of low hardness such as layer 106 and 104. Since these layers are said to be of rubber and sponge

(see page 8, lines 18, 19) and have the same function as in the present application, ie complete image transfer to the intermediate transfer member and easy removal of the final image carrier from the outer surface, the hardness of these layers would be appropriately chosen by the skilled person. If he measured their hardnesses, they would evidently be in the very broad range claimed, ie below 80 Shore-A for each of the known sub-layers. Soft layers of a hardness below 70 and 60 Shore-A are also common in this art.
Claims 48 to 50 infringe Art. 33(3) PCT.

(D5) US-A-4 112 841 has also been cited in the ISR against part C.
In Fig.8 thereof a lithographic printing master comprising a resilient layer 2 is shown having a Shore A hardness between 30 and 80, see col.6, line 48. Although the exposed and inked printing master transfers images to paper, it is assumed that the image transfer members of the present application are in a different technical filed, so that the person skilled would not look into the prior art in lithography.

(D6) EP-A0 399 794 has also been cited in the ISR against part C.
In Fig. 4 thereof some belt types having sublayers of specific Shore-A hardnesses are disclosed. Although belt 5 transfers images between a hot location 20 and a cold location 10, this belt is not an image transfer member in the sense of the present application, see section VIII of this Report.

4. The industrial applicability of means and methods for producing electrostatic images according to the claims is evident, Art. 33(4) PCT can not be disputed.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 48 is not clear for the two following reasons; Art. 6 PCT is therefore infringed.

1. An image transfer member covers all members transferring images from one pace to another or from one member tro another member. The precise meaning in the present context is to be defined.

2. The transfer surface of the image transfer member should be adapted to receive images. It is not clear whether this transfer surface is the release surface mentioned in the following feature.

CLAIMS

1. A method of producing a multi-layered image transfer member including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surface, comprising:

forming the image transfer portion on a carrier substrate; and

transferring the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

2. A method according to claim 1 wherein the image transfer portion is formed on the carrier substrate such the back surface of the image transfer portion faces the carrier substrate.

3. A method according to claim 1 or claim 2 wherein transferring the image transfer portion comprises:

transferring the image transfer portion to a moving carrier surface, such that at least a portion of the image transfer surface is in contact with the moving surface, and

laminating the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

4. A method according to any of the preceding claims and further comprising curing at least one of the layers in said multi-layered member after transferring the image transfer portion.

5. A method according to claim 4 wherein the image transfer member comprises a polymer layer interfacing the back surface of the image transfer portion and wherein curing at least one of the layers comprises curing the polymer layer after laminating the image transfer portion onto the body portion.

6. A method according to claim 5 wherein the polymer layer is a conductive layer.

7. A method according to claim 5 or claim 6 wherein the polymer layer is part of the body portion.

November 11, 1997

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8. A method according to claim 5 or claim 6 wherein the polymer layer is part of the image transfer portion.

9. A method according to any of claims 4-7 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer and the conforming layer before laminating the image transfer portion to the body portion.

10. A method according to any of claims 4-8 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer the conforming layer after laminating the image transfer portion to the body portion.

11. A method according to any of the preceding claims wherein forming the image transfer portion comprises:

coating the carrier substrate with a conforming layer.

12. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a barrier layer.

13. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a conductive layer.

14. A method according to claim 13 wherein forming the image transfer portion comprises:

coating the conductive layer with a barrier layer.

15. A method according to claim 12 or claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conforming layer.

16. A method according to claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conductive layer.

17. A method according to claim 13 or claim 16 wherein forming the image transfer portion comprises:

coating the conductive layer with a conforming layer.

18. A method according to any of claims 9-11, 15 or 17 wherein the conforming layer comprises a plurality of layers of different hardnesses.

19. A method according to any of claims 11, 15, 17, or 18 wherein forming the image transfer portion comprises:

overcoating the conforming layer with a release layer.

20. A method according to any of the preceding claims wherein the release layer comprises a layer of condensation type silicone.

21. A method according to claim 20 wherein the condensation type silicone contains less than 4% filler material.

22. A method according to claim 20 wherein the condensation type silicone contains less than 1% filler material.

23. A method according to claim 20 wherein the condensation type silicone contains less than 0.1% filler material.

24. A method according to any of claims 20-23 wherein the release layer has a thickness of less than 1 mm.

25. A method according to any of claims 20-23 wherein the release layer is less than 200 micrometers thick.

26. A method according to any of claims 20-23 wherein the release layer is less than 100 micrometers thick.

27. A method according to any of claims 20-23 wherein the layer is less than 50 micrometers thick.

28. A method according to any of claims 20-23 wherein the layer is between about 3 and about 15 micrometers thick.

29. An image transfer member suitable for the transfer of toner images and having an outer release layer of a condensation type silicone.

30. An image transfer member according to claim 29 wherein the layer has a thickness of less than 1 mm.

31. An image transfer member according to claim 29 wherein the layer is less than 200 micrometers thick.

32. An image transfer member according to claim 29 wherein the layer is less than 100 micrometers thick.

33. An image transfer member according to claim 29 wherein the layer is less than 50 micrometers thick.

34. An image transfer member according to claim 29 wherein the layer is between about 3 and about 15 micrometers thick.

35. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 10% silicone oil.

36. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 5% silicone oil.

37. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 1% silicone oil.

38. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains essentially no silicone oil.

39. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 4% filler material.

40. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 1% filler material.

41. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 0.1% filler material.

42. An image transfer member according to any of claims 29 to 41 wherein the outer release layer contains added crosslinker.

43. An image transfer member according to any of claims 29 to 42 wherein the outer release layer contains added catalyst.

44. An image transfer member according to any of claims 29 to 43 wherein the outer release layer contains added conductive material.

45. An image transfer member according to any of claims 29 to 44 wherein adhesion of the outer release layer to the image transfer member is enhanced utilizing primer.

46. Apparatus for producing a multi-layered image transfer member including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surfaced, comprising:

a carrier substrate having the image transfer portion formed thereon such that the back surface of the image transfer portion faces the carrier substrate and is releasable therefrom; and

a moving carrier surface, in contact with a portion of the image transfer surface, which receives the image transfer portion from the carrier substrate, at a first transfer region, and laminates the image transfer portion onto the body portion, at a second transfer region, with the back surface of the image transfer portion facing the body portion.

47. Apparatus according to claim 46 and further comprising a curing device which cures at least one of the layers in said multi-layered member.

48. An image transfer member comprising:

a transfer surface adapted to receive already formed images; and

a conforming layer substantially immediately beneath the release surface which comprises a plurality of sub-layers each having a Shore A hardness of less than 80.

49. An image transfer member according to claim 48 wherein the sub-layers each have a shore A hardness of less than 70.

50. An image transfer member according to claim 48 wherein the sub-layers each have a shore A hardness of less than 60.

51. An image transfer member according to any of claims 48-50 wherein the sub-layers comprise at least two sub-layers, a relatively harder one of said sub-layers being situated between the release surface and a relatively softer one of said sub-layers.

52. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 42.

53. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 35.

AMENDED SHEET

54. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 25.

55. An image transfer member according to any of claims 51 to 54 wherein the relatively harder sub-layer has a Shore A hardness of greater than 42.

56. An image transfer member according to any of claims 51 to 54 wherein the relatively harder sub-layer has a Shore A hardness of greater than 50.

57. An image transfer member according to any of claims 51 to 54 wherein the ratio of thickness of the relatively hard sub-layer to the thickness of the relatively softer sub-layer is about 1:4.

58. An image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface and including a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

59. An image transfer blanket according to claim 58 wherein the supporting base layer comprises a layer of Kapton.

60. A method of producing a multi-layered image transfer blanket comprising:

forming a multi-layered image transfer portion having an image transfer surface and a supporting base layer, the base layer being formed of a substantially non-compliant material; and

attaching the image transfer portion to a body portion including a layer of substantially resilient material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

61. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum; and

an image transfer blanket mounted on the drum, the image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface which receives the toner image and a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

62. An intermediate transfer member according to claim 60 wherein the supporting base layer comprises a layer of Kapton.

63. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum;

a resilient blanket body mounted circumferentially on the surface of the drum and having a functional length;

a sheet of image transfer material having first and second ends and having a length equal to at least twice the functional length of the blanket body;

a transfer material supply member associated with the first end of the sheet; and

a transfer material take-up member associated with the second end of the sheet,

wherein an appropriate length of the sheet is stretched between the supply member and the take-up member, over the functional length of the blanket body.

64. An intermediate transfer member according to claim 63 wherein a predetermined length of used-up sheet is taken-up by the take-up member and replaced with approximately the same length of unused sheet which is supplied the supply member.

65. A carrier sheet having formed thereon a multi-layered image transfer arrangement, the image transfer arrangement comprising a back surface and an image transfer surface, wherein the back surface of the image transfer arrangement faces the carrier sheet and is removably attached thereto.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference *(if desired) (12 characters maximum)* BO 40798

Box No. I TITLE OF INVENTION

Intermediate transfer blanket and method of producing the same

Box No. II APPLICANT

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

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This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

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This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only *(If this check-box is marked, do not fill in below.)*

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☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

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☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following sub-boxes is used, this sheet is not to be included in the request.

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This person is:
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- [x] applicant and inventor
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State *(i.e. country)* of nationality: Israeli (IL)

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This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

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- [x] applicant and inventor
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- [ ] all designated States
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This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

- [x] Further applicants and/or (further) inventors are indicated on another continuation sheet.

Continuation of Box No. III **FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS**

If none of the following sub-boxes is used, this sheet is not to be included in the request.

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This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

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This person is:
- [ ] applicant only
- [x] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(i.e. country)* of nationality: Israeli (IL)

State *(i.e. country)* of residence: Israeli (IL)

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

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- [x] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(i.e. country)* of nationality: Israeli (IL)

State *(i.e. country)* of residence: Israeli (IL)

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

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Israel

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- [ ] applicant only
- [x] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

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State *(i.e. country)* of residence: Israeli (IL)

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

- [ ] Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) *(mark the applicable check-boxes; at least one must be marked)*:

Regional Patent

- [X] **AP** **ARIPO Patent:** **KE** Kenya, **LS** Lesotho, **MW** Malawi, **SD** Sudan, **SZ** Swaziland, **UG** Uganda, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- [X] **EA** **Eurasian Patent:** **AM** Armenia, **AZ** Azerbaijan, **BY** Belarus, **KG** Kyrgyzstan, **KZ** Kazakstan, **MD** Republic of Moldova, **RU** Russian Federation, **TJ** Tajikistan, **TM** Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- [X] **EP** **European Patent:** **AT** Austria, **BE** Belgium, **CH and LI** Switzerland and Liechtenstein, **DE** Germany, **DK** Denmark, **ES** Spain, **FI** Finland, **FR** France, **GB** United Kingdom, **GR** Greece, **IE** Ireland, **IT** Italy, **LU** Luxembourg, **MC** Monaco, **NL** Netherlands, **PT** Portugal, **SE** Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- [X] **OA** **OAPI Patent:** **BF** Burkina Faso, **BJ** Benin, **CF** Central African Republic, **CG** Congo, **CI** Côte d'Ivoire, **CM** Cameroon, **GA** Gabon, **GN** Guinea, **ML** Mali, **MR** Mauritania, **NE** Niger, **SN** Senegal, **TD** Chad, **TG** Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT *(if other kind of protection or treatment desired, specify on dotted line)* .....

National Patent *(if other kind of protection or treatment desired, specify on dotted line)*:

- [X] **AL** Albania .....
- [X] **AM** Armenia .....
- [X] **AT** Austria .....
- [X] **AU** Australia .....
- [X] **AZ** Azerbaijan
- [X] **BB** Barbados
- [X] **BG** Bulgaria .....
- [X] **BR** Brazil .....
- [X] **BY** Belarus
- [X] **CA** Canada
- [X] **CH and LI** Switzerland and Liechtenstein
- [X] **CN** China .....
- [X] **CZ** Czech Republic .....
- [X] **DE** Germany .....
- [X] **DK** Denmark .....
- [X] **EE** Estonia .....
- [X] **ES** Spain .....
- [X] **FI** Finland .....
- [X] **GB** United Kingdom
- [X] **GE** Georgia .....
- [X] **HU** Hungary .....
- [X] **IL** Israel
- [X] **IS** Iceland
- [X] **JP** Japan .....
- [X] **KE** Kenya .....
- [X] **KG** Kyrgyzstan .....
- [X] **KP** Democratic People's Republic of Korea .....
- [X] **KR** Republic of Korea .....
- [X] **KZ** Kazakstan .....
- [X] **LK** Sri Lanka
- [X] **LR** Liberia
- [X] **LS** Lesotho .....
- [X] **LT** Lithuania
- [X] **LU** Luxembourg .....
- [X] **LV** Latvia
- [X] **MD** Republic of Moldova .....
- [X] **MG** Madagascar .....
- [X] **MK** The former Yugoslav Republic of Macedonia .....
- [X] **MN** Mongolia
- [X] **MW** Malawi .....
- [X] **MX** Mexico .....
- [X] **NO** Norway
- [X] **NZ** New Zealand .....
- [X] **PL** Poland .....
- [X] **PT** Portugal .....
- [X] **RO** Romania
- [X] **RU** Russian Federation .....
- [X] **SD** Sudan
- [X] **SE** Sweden
- [X] **SG** Singapore
- [X] **SI** Slovenia .....
- [X] **SK** Slovakia .....
- [X] **TJ** Tajikistan .....
- [X] **TM** Turkmenistan .....
- [X] **TR** Turkey .....
- [X] **TT** Trinidad and Tobago .....
- [X] **UA** Ukraine .....
- [X] **UG** Uganda .....
- [X] **US** United States of America .....
- [X] **UZ** Uzbekistan .....
- [X] **VN** Viet Nam .....

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- [X] CU Cuba .....
- [X] .....
- [X] .....

In addition to the designations made above, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except the designation(s) of _____.

The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. *(Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)*

Box No. VI PRIORITY C[redacted] Further priority claims [redacted]dicated in the Supplemental Box ☐

The priority of the following earlier application(s) is hereby claimed:

Country *(in which, or for which, the application was filed)*	Filing Date *(day/month/year)*	Application No.	Office of filing *(only for regional or international application)*
item (1) Israel	August 17, 1995	114, 992	
item (2)			
item (3)			

Mark the following check-box if the certified copy of the earlier application is to be issued by the Office which for the purposes of the present international application is the receiving Office (a fee may be required):

☐ The receiving Office is hereby requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s) : _____

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(If two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):* ISA /_____

Earlier search *Fill in where a search (international, international-type or other) by the International Searching Authority has already been carried out or requested and the Authority is now requested to base the international search, to the extent possible, on the results of that earlier search. Identify such search or request either by reference to the relevant application (or the translation thereof) or by reference to the search request.*

Country (or regional Office): Date *(day/month/year)*: Number:

Box No. VIII CHECK LIST

This international application contains the following number of sheets:

1. request	:	5	sheets
2. description	:	29	sheets
3. claims	:	9	sheets
4. abstract	:	1	sheets
5. drawings	:	4	sheets
Total	:	48	sheets

This international application is accompanied by the item(s) marked below:

1. ☐ separate signed power of attorney
2. ☐ copy of general power of attorney
3. ☐ statement explaining lack of signature
4. ☒ priority document(s) *identified in Box No. VI as item(s):* TO FOLLOW
5. ☒ fee calculation sheet
6. ☐ separate indications concerning deposited microorganisms
7. ☐ nucleotide and/or amino acid sequence listing (diskette)
8. ☐ other *(specify)*:

Figure No. _____ of the drawings (if any) should accompany the abstract when it is published.

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

JANSSEN, F.H.J.F.
The Hague, August 16, 1996

For receiving Office use only

1. Date of actual receipt of the purported international application:
2. Drawings: ☐ received: ☐ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:
4. Date of timely receipt of the required corrections under PCT Article 11(2):
5. International Searching Authority specified by the applicant: ISA /
6. ☐ Transmittal of search copy delayed until search fee is paid

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

This sheet is not part of and does not count as a sheet of the international application.

PCT

FEE CALCULATION SHEET
Annex to the Request

For receiving Office use only

International application No.

Date stamp of the receiving Office

Applicant's or agent's file reference: BO 40798

Applicant: Indigo N.V.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE . . . . . 110 [T]
2. SEARCH FEE . . . . . 2740 [S]

International search to be carried out by _____
(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee
The international application contains 48 sheets.

first 30 sheets . . . . . 1070 [b_1]

18 (remaining sheets) x 21 (additional amount) = 378 [b_2]

Add amounts entered at b_1 and b_2 and enter total at B . . . . 1448 [B]

Designation Fees
The international application contains all designations.

11 (number of designation fees payable *(maximum 11)*) x 260 (amount of designation fee) = 2860 [D]

Add amounts entered at B and D and enter total at I . . . . . 4308 [I]

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT . . . . . [P]

TOTAL FEES PAYABLE
Add amounts entered at T, S, I and P, and enter total in the TOTAL box . . 7158 TOTAL

☐ The designation fees are not paid at this time.

MODE OF PAYMENT

☒ authorization to charge deposit account (see below)	☐ bank draft	☐ coupons
☐ cheque	☐ cash	☐ other *(specify)*:
☐ postal money order	☐ revenue stamps	

DEPOSIT ACCOUNT AUTHORIZATION *(this mode of payment may not be available at all receiving Offices)*

The RO/ NL

☒ is hereby authorized to charge the total fees indicated above to my deposit account.

☒ is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☒ is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

15.3.0/0 — Deposit Account Number

August 16, 1996 — Date *(day/month/year)*

Signature: DE VRIES, Erik E.

See Notes to the fee calculation sheet

Nederlandsch Octrooibureau
Anno 1888

Octrooigemachtigden
European Patent Attorneys

Merken & Modellen
gemachtigden
Trademark & Design
Attorneys

International Preliminary Examination Authority
European Patent Office
attention: Mr.K.P.Hiltner
Erhardtstrasse 27
D-80298 MUENCHEN
Deutschland

The Hague, November 11, 1997

Our ref. B0 40798/PCT/dVr/CK

Re: International Patent Application No. PCT/NL 96/00323
Indigo N.V.

Dear Mr. Hiltner,

Please find enclosed comments of applicant after your first written opinion of August 11, last.

The representative,

E.E. de Vries

Enclosures:
Comments applicant
New claims 1 - 65 incl.

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CompuServe: 100566,1122

Bankrelaties / Bankers
ABN / Amro 43 00 58 594
Rabo Bank 129916001
Postbank 18598
BTW/VAT NL 002605314B01

Application Number: PCT/NL96/0323
Applicant; INDIGO, N.V., et al.
Title: Intermediate Transfer Blanket And Method Of Producing The Same
International Filing Date: 16 August 1997

LETTER ACCOMPANYING AMENDMENT

This letter and the accompanying amendment are in response to a first written opinion dated August 11, 1997. New claim pages 30-37 including amended claims 1 and 38-64 is submitted herewith.

Applicants note that the claims as originally filed contained two claims numbered 37. Thus, all claims from 38 onward are renumbered to reflect this fact. In addition, claims 1, 46, 48 (and claims dependent on claim 48) and 65 (new numbers) are amended substantively. Claims 1, 46 and 48 are amended by changing the word "blanket" to "member." This change is fully supported by the disclosure, if only for the reason that the blanket as described in the disclosure forms part of a member. Claim 65 is amended in the manner described below.

The Examiner has indicated that claim 29 is lacking in inventive step in view of D1, which is a prior patent application of the first applicant in the present application. Applicants respectfully traverse the objection.

The Examiner indicated that the application disclosed only one specific type of condensation type silicone. In this he is incorrect. The application discloses two examples of such silicone, namely RTV 11 and RTV 41 which are individually capable of forming a coating according to claim 29. See page 23, lines 12-16 of the application. The application describes, in detail, the best mode of performing the invention, utilizing a mixture of the two types. Furthermore, while not specifically disclosed, other types of condensation type silicone have been tested and found suitable for the invention. RTV silicone 236 and Syl-Off 294 of the prior art are not condensation type silicone materials.

Furthermore, the Examiner states that he is unable to examine which chemical compounds of condensation type silicone should be in the release layer. Applicants do not understand this statement. However, applicants can state that, to the extent that such condensation type materials can be formed into a thin coating, they can be used in the invention. What has been disclosed is just those materials which, at the time of filing of the application gave the best results.

Finally, the Examiner states that D1 teaches the formation of a layer of silicone rubber, namely Syl-Off 294. However, in view of the fact that this material is not a

condensation type silicone it is hard to understand how this teaching in D1 forms a positive teaching making obvious the use of condensation type silicone. Furthermore, applicants note the portion of the application starting at page 21, line 35 which explains why condensation type silicone is not generally used for thin layers and the portion of the application starting page 22, line 2 describes one method of making a suitable material for forming thin films. Other preparation methods than those specifically described in the application, are of course possible, however, the general problems involved in forming such layers (especially when using commercially available materials) would tend to lead one away from the use of condensation type silicone.

The Examiner has indicated that claim 48 is anticipated by D1. Applicant respectfully traverses this finding of the Examiner.

Claim 48 defines an image transfer member having a plurality of sub-layers beneath the release surface each having a Shore A hardness of less than 80.

The Examiner has stated that layer 106 and layer 104 of D1 are substantially immediately beneath the release surface. In this he is correct. However, the hardness of layer 106 is not stated in D1 and there is no teaching of it being softer than Shore A 80 as required by claim 48. The application at page 20, line 15 to page 21, line 21 describes the non-obvious reasons for providing such a two layer construction.

Claim 65 is indicated as being anticipated by D1. Claim 65 has been amended to change the "carrier substrate" to a "carrier sheet". Even agreeing arguendo that the drum 30 of D1 could be considered to read on the carrier substarte of unamended claim 65, there is no question that it does not read on the amended claim. Furthermore, the new claim is not obvious in view of D1, since there would be no reason to have the image transfer arrangement removably attached to a sheet, based on the teachings of D1.

CLAIMS

1. A method of producing a multi-layered image transfer member including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surface, comprising:

forming the image transfer portion on a carrier substrate; and

transferring the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

2. A method according to claim 1 wherein the image transfer portion is formed on the carrier substrate such the back surface of the image transfer portion faces the carrier substrate.

3. A method according to claim 1 or claim 2 wherein transferring the image transfer portion comprises:

transferring the image transfer portion to a moving carrier surface, such that at least a portion of the image transfer surface is in contact with the moving surface, and

laminating the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

4. A method according to any of the preceding claims and further comprising curing at least one of the layers in said multi-layered member after transferring the image transfer portion.

5. A method according to claim 4 wherein the image transfer member comprises a polymer layer interfacing the back surface of the image transfer portion and wherein curing at least one of the layers comprises curing the polymer layer after laminating the image transfer portion onto the body portion.

6. A method according to claim 5 wherein the polymer layer is a conductive layer.

7. A method according to claim 5 or claim 6 wherein the polymer layer is part of the body portion.

November 11, 1997

8. A method according to claim 5 or claim 6 wherein the polymer layer is part of the image transfer portion.

9. A method according to any of claims 4-7 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer and the conforming layer before laminating the image transfer portion to the body portion.

10. A method according to any of claims 4-8 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer the conforming layer after laminating the image transfer portion to the body portion.

11. A method according to any of the preceding claims wherein forming the image transfer portion comprises:

coating the carrier substrate with a conforming layer.

12. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a barrier layer.

13. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a conductive layer.

14. A method according to claim 13 wherein forming the image transfer portion comprises:

coating the conductive layer with a barrier layer.

15. A method according to claim 12 or claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conforming layer.

16. A method according to claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conductive layer.

17. A method according to claim 13 or claim 16 wherein forming the image transfer portion comprises:

coating the conductive layer with a conforming layer.

18. A method according to any of claims 9-11, 15 or 17 wherein the conforming layer comprises a plurality of layers of different hardnesses.

19. A method according to any of claims 11, 15, 17, or 18 wherein forming the image transfer portion comprises:

overcoating the conforming layer with a release layer.

20. A method according to any of the preceding claims wherein the release layer comprises a layer of condensation type silicone.

21. A method according to claim 20 wherein the condensation type silicone contains less than 4% filler material.

22. A method according to claim 20 wherein the condensation type silicone contains less than 1% filler material.

23. A method according to claim 20 wherein the condensation type silicone contains less than 0.1% filler material.

24. A method according to any of claims 20-23 wherein the release layer has a thickness of less than 1 mm.

25. A method according to any of claims 20-23 wherein the release layer is less than 200 micrometers thick.

26. A method according to any of claims 20-23 wherein the relcase layer is less than 100 micrometers thick.

27. A method according to any of claims 20-23 wherein the layer is less than 50 micrometers thick.

28. A method according to any of claims 20-23 wherein the layer is between about 3 and about 15 micrometers thick.

29. An image transfer member suitable for the transfer of toner images and having an outer release layer of a condensation type silicone.

30. An image transfer member according to claim 29 wherein the layer has a thickness of less than 1 mm.

31. An image transfer member according to claim 29 wherein the layer is less than 200 micrometers thick.

32. An image transfer member according to claim 29 wherein the layer is less than 100 micrometers thick.

33. An image transfer member according to claim 29 wherein the layer is less than 50 micrometers thick.

34. An image transfer member according to claim 29 wherein the layer is between about 3 and about 15 micrometers thick.

35. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 10% silicone oil.

36. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 5% silicone oil.

37. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 1% silicone oil.

38. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains essentially no silicone oil.

39. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 4% filler material.

40. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 1% filler material.

41. A method according to any of claims 29 to 38 wherein the condensation type silicone contains less than 0.1% filler material.

42. An image transfer member according to any of claims 29 to 41 wherein the outer release layer contains added crosslinker.

43. An image transfer member according to any of claims 29 to 42 wherein the outer release layer contains added catalyst.

44. An image transfer member according to any of claims 29 to 43 wherein the outer release layer contains added conductive material.

45. An image transfer member according to any of claims 29 to 44 wherein adhesion of the outer release layer to the image transfer member is enhanced utilizing primer.

46. Apparatus for producing a multi-layered image transfer member including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surfaced, comprising:

a carrier substrate having the image transfer portion formed thereon such that the back surface of the image transfer portion faces the carrier substrate and is releasable therefrom; and

a moving carrier surface, in contact with a portion of the image transfer surface, which receives the image transfer portion from the carrier substrate, at a first transfer region, and laminates the image transfer portion onto the body portion, at a second transfer region, with the back surface of the image transfer portion facing the body portion.

47. Apparatus according to claim 46 and further comprising a curing device which cures at least one of the layers in said multi-layered member.

48. An image transfer member comprising:

a transfer surface adapted to receive already formed images; and

a conforming layer substantially immediately beneath the release surface which comprises a plurality of sub-layers each having a Shore A hardness of less than 80.

49. An image transfer member according to claim 48 wherein the sub-layers each have a shore A hardness of less than 70.

50. An image transfer member according to claim 48 wherein the sub-layers each have a shore A hardness of less than 60.

51. An image transfer member according to any of claims 48-50 wherein the sub-layers comprise at least two sub-layers, a relatively harder one of said sub-layers being situated between the release surface and a relatively softer one of said sub-layers.

52. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 42.

53. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 35.

54. An image transfer member according to claim 51 wherein the relatively softer sub-layer has a Shore A hardness of less than 25.

55. An image transfer member according to any of claims 51 to 54 wherein the relatively harder sub-layer has a Shore A hardness of greater than 42.

56. An image transfer member according to any of claims 51 to 54 wherein the relatively harder sub-layer has a Shore A hardness of greater than 50.

57. An image transfer member according to any of claims 51 to 54 wherein the ratio of thickness of the relatively hard sub-layer to the thickness of the relatively softer sub-layer is about 1:4.

58. An image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface and including a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

59. An image transfer blanket according to claim 58 wherein the supporting base layer comprises a layer of Kapton.

60. A method of producing a multi-layered image transfer blanket comprising:

forming a multi-layered image transfer portion having an image transfer surface and a supporting base layer, the base layer being formed of a substantially non-compliant material and

attaching the image transfer portion to a body portion including a layer of substantially resilient material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

61. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum; and

an image transfer blanket mounted on the drum, the image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface which receives the toner image and a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

62. An intermediate transfer member according to claim 60 wherein the supporting base layer comprises a layer of Kapton.

63. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum;

a resilient blanket body mounted circumferentially on the surface of the drum and having a functional length;

a sheet of image transfer material having first and second ends and having a length equal to at least twice the functional length of the blanket body;

a transfer material supply member associated with the first end of the sheet; and

a transfer material take-up member associated with the second end of the sheet,

wherein an appropriate length of the sheet is stretched between the supply member and the take-up member, over the functional length of the blanket body.

64. An intermediate transfer member according to claim 63 wherein a predetermined length of used-up sheet is taken-up by the take-up member and replaced with approximately the same length of unused sheet which is supplied the supply member.

65. A carrier sheet having formed thereon a multi-layered image transfer arrangement, the image transfer arrangement comprising a back surface and an image transfer surface, wherein the back surface of the image transfer arrangement faces the carrier sheet and is removably attached thereto.

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY Nederlandsch Octrooibureau **PCT**

To:
DE BRUIJN, Leendert C.
NEDERLANDSCH OCTROOIBUREAU
Postbus 29720
Scheveningseweg 82
NL-2502 LS The Hague
PAYS-BAS

INGEK 13 AUG 1997
Opnieuw bewerken

WRITTEN OPINION
(PCT Rule 66)

Applicant's or agent's file reference: BO 40798	Date of mailing (day/month/year): 11.08.97
	REPLY DUE within 3 months/~~days~~ from the above date of mailing
International application No.: PCT/NL 96/00323	International filing date (day/month/year): 16/08/1996
Priority date (day/month/year): 17/08/1995	
International Patent Classification (IPC) or both national classification and IPC: G03G15/16	
Applicant: INDIGO N.V. et al.	

1. This written opinion is the first (~~first, etc.~~) drawn up by this International Preliminary Examining Authority.
2. This report contains indications and corresponding pages relating to the following items:
   - I [X] Basis of the opinion
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [X] Lack of unity of invention
   - V [X] Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [X] Certain defects in the international application
   - VIII [X] Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.
   - **When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).
   - **How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.
   - **Also** For an additional opportunity to submit amendments, see Rule 66.4. For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4*bis*. For an informal communication with the examiner, see Rule 66.6.

   If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 17/12/1997.

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Authorized officer
Examiner: K.P. Hiltner

Formalities officer (incl. extension of time limits): C. Perrinelle
Telephone No. 2399/2464

WRITTEN OPINION

Intern. application No.
PCT/NL96/00323

I. Basis of the opinion

1. This opinion has been drawn up on the basis of (Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed".):

[ ] the international application as originally filed.

[x] the description, pages 1-29, as originally filed,
pages _____, filed with the demand,
pages _____, filed with the letter of _____,

[x] the claims, Nos. 1-56, 64, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. _____, filed with the letter of _____,

[x] the drawings, sheets/fig 1/4 - 4/4, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig _____, filed with the letter of _____,

2. The amendments have resulted in the cancellation of:
[ ] the description, pages _____.
[ ] the claims, Nos. _____.
[ ] the drawings, sheets/fig _____.

3. [ ] This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation (Form PCT/IPEA/405) to restrict or pay additional fees the applicant has:

[ ] restricted the claims.
[x] paid additional fees.
[ ] paid additional fees under protest.
[ ] neither restricted nor paid additional fees.

2. This Authority found that the requirement of unity of invention is not complied with for the following reasons: ~~and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees:~~

The first subject matter (A) is claimed in independent claims 1 (method of producing a blanket), 45 (apparatus for producing a blanket), and 64 (carrier substrate) An improved method of forming a multilayered image transfer blanket should be provided.

The second subject matter (B) is claimed in independent claim 29. The outer release layer of an image transfer member should be of long lifetime.

The third subject matter (C) is claimed in independent claim 47. The back of the image transfer blanket should well adhere to the supporting heated drum without using an adhesive, see second paragraph on page 14.

The various objects underlying the above-defined matters A, B, C are achieved by quite different means having obviously no common concept.

3. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this opinion:

[ ] all parts.
[x] the parts relating to claims Nos. 1-56, 64.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 47, 64
	Claims
Inventive Step (IS)	Claims 29
	Claims
Industrial Applicability (IA)	Claims
	Claims

2. CITATIONS AND EXPLANATIONS

1. Subject matter A:--

The subject matter of claim 64 evidently infringes Art. 33(2) PCT, since the carrier substrate is not defined as the means 200 of Fig. 3, ie a means removably carrying the image transfer portion of an image transfer blanket for carrying a toner image.
The carrier substrate could be the drum 30 of present Fig. 1 which carries multiple layers the outer whereof is the image transfer surface.
Such "carrier substrates" are known from Figs. 3A and 3B of D1= EP-A-0 584 893, for example.

2. Subject matter B:--

The ITM according to claim 29 contains an outer release layer of condensation type silicone. The only disclosed specific example is RTV 11 (page 23) which seems to be a trade mark. The examiner is unable to examine which

chemical compounds of condensation type silicone should be in the release layer of the ITM.
D1 teaches the skilled person to form the release layer of silicone rubber, such as Syl-Off 294 (see page 10, lines 30-32).
Art. 33(3) seems to be infringed.

3. Subject matter C:--

The blanket shown in Fig. 3A of D1 anticipates the subject matter of claim 47. It is evident that a rubber layer 106 or a sponge layer 104 are "substantially" immediately beneath the release surface 110. The skilled person knows all physical properties of rubber or sponge or looks them up in standard books. The Shore A hardness of these soft materials is far below 80.

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

On page 9, the publication nr. WO 96/11 426 will be added to the application nr. NL 95/00 188.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Clarity of independent claims:--

1.1 The applicant is invited to provide a clear definition of the terms
(i) "image transfer blanket" used in claims 1, 45, 47
(ii) "image transfer member" used in claim 29
(iii)"image transfer arrangement" usec in claim 64

If said terms are to designate an intermediate carrier for a toner image this should be reflected in the claims which, in their present wording, infringe Art. 6 PCT.

1.2 It is not the back surface of the image transfer arrangement (ITA) which is removably attached to the carrier substrate in claim 64 but rather the ITA.

2. Clarity of dependent claims:--

2.1 Claim 20 can only be appended to claims 9 or 10 which comprise a release layer.

2.2 The category of claims 38 to 40 is to be amended. They should be directed to an image transfer member, since claims 29-37 are also directed to such a member.

2.3 The "transfer surface" in claim 47, second line, should be replaced by "release surface", see the following feature.

WO 97/07433
PCT/NL96/00323

PATENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

DE BRUIJN, Leendert, C.
Nederlandsch Octrooibureau
Scheveningseweg 82
P.O. Box 29720
NL-2502 LS The Hague
PAYS-BAS

Date of mailing (day/month/year) 27 February 1997 (27.02.97)	
Applicant's or agent's file reference BO 40798	**IMPORTANT NOTICE**

International application No.	**International filing date** (day/month/year)	**Priority date** (day/month/year)
PCT/NL96/00323	16 August 1996 (16.08.96)	17 August 1995 (17.08.95)

Applicant
INDIGO N.V. et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
   AU,BR,CA,CN,CZ,DE,EP,FI,GB,IL,JP,KP,KR,NO,NZ,PL,RO,SK,US

   In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
   AL,AM,AP,AT,AZ,BB,BG,BY,CH,CU,DK,EA,EE,ES,GE,HU,IS,KE,KG,KZ,LK,LR,LS,LT,LU,LV,MD,
   MG,MK,MN,MW,MX,OA,PT,RU,SD,SE,SG,SI,TJ,TM,TR,TT,UA,UG,UZ,VN

   The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
   27 February 1997 (27.02.97) under No. WO 97/07433

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, **a demand for international preliminary examination** must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer
J. Zahra

Telephone No. (41-22) 730.91.11

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

DE BRUIJN, Leendert, C.
Nederlandsch Octrooibureau
Scheveningseweg 82
P.O. Box 29720
NL-2502 LS The Hague
PAYS-BAS

NOTIFICATION CONCERNING SUBMISSION OF PRIORITY DOCUMENTS

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 18 October 1996 (18.10.96)	
Applicant's or agent's file reference BO 40798	**IMPORTANT NOTIFICATION**

International application No.	**International filing date** (day/month/year)	**Priority date** (day/month/year)
PCT/NL96/00323	16 August 1996 (16.08.96)	17 August 1995 (17.08.95)

Applicant

INDIGO N.V. et al

The applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to the following application(s):

Priority application No:	Priority date:	Priority country:	Date of receipt of priority document:
114992	17 Aug 1995 (17.08.95)	IL	15 Oct 1996 (15.10.96)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Peggy Steunenberg

Telephone No.: (41-22) 730.91.11

PATENT COOPERATION TREATY

From the RECEIVING OFFICE

To: Mr. L.C. de Bruijn
NEDERLANDSCH OCTROOIBUREAU
Scheveningseweg 82
2517 KZ Den Haag

26 1996

Octrooi Bewerke

PCT

NOTIFICATION OF THE INTERNATIONAL APPLICATION NUMBER AND OF THE INTERNATIONAL FILING DATE

(PCT Rule 20.5(c))

Date of mailing *(day/month/year)*
23 August 1996 (23.08.96)

Applicant's or agent's file reference
BO 40798

IMPORTANT NOTIFICATION

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/NL96/00323	16 August 1996 (16.08.96)	17 August 1995 (17.08.95)

Applicant
Indigo N.V. et al

Title of the invention
Intermediate transfer blanket and method of producing the same

1. The applicant is hereby notified that the international application has been accorded the international application number and the international filing date indicated above.

2. The applicant is further notified that the record copy of the international application:

[X] was transmitted to the International Bureau on 23 August 1996 (23.08.96)

[ ] has not yet been transmitted to the International Bureau for the reason indicated below and a copy of this notification has been sent to the International Bureau *:

[ ] because the necessary national security clearance has not yet been obtained.

[ ] because *(reason to be specified)*:

* The international Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/IB/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c))

Name and mailing address of the receiving Office
Bureau voor de Industriële Eigendom
P.O. Box 5820
2280 HV Rijswijk
The Netherlands

Facsimile No. +31703986507

Authorized officer
R . Knoester

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Form PCT/RO/105 (July 1992)

P16370

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :M. ARONHIME et al.

Serial No. :Not Yet Assigned PCT Branch

Filed :Concurrently Herewith PCT/NL96/00323

For :INTERMEDIATE TRANSFER BLANKET AND METHOD OF PRODUCING THE SAME

CLAIM OF PRIORITY

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Applicant hereby claims the right of priority granted pursuant to 35 U.S.C. 119 based upon Israeli Application No. 114,992 filed 17 August 1995. The International Bureau already should have sent a certified copy of the Israeli application to the United States designated office. If the certified copy has not arrived, please contact the undersigned.

Respectfully submitted,
M. ARONHIME et al.

Arnold Turk
Reg. No. 33,094

February 13, 1998
GREENBLUM & BERNSTEIN, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NL 96/00323

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

CLAIMS : 1,45,64 and dependent claims 2-28,46
CLAIMS : 29, dependent claims 30-44
CLAIMS : 47, dependent claims 48-56
CLAIMS : 57,59,60,62 and dependent claims 58,61,63

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searches without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

CLAIMS

1. A method of producing a multi-layered image transfer blanket including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surface, comprising:

forming the image transfer portion on a carrier substrate; and

transferring the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

2. A method according to claim 1 wherein the image transfer portion is formed on the carrier substrate such that the back surface of the image transfer portion faces the carrier substrate.

3. A method according to claim 1 or claim 2 wherein transferring the image transfer portion comprises:

transferring the image transfer portion to a moving carrier surface, such that at least a portion of the image transfer surface is in contact with the moving surface; and

laminating the image transfer portion onto the body portion such that the back surface of the image transfer portion faces the body portion.

4. A method according to any of the preceding claims and further comprising curing at least one of the layers in said multi-layered blanket after transferring the image transfer portion.

5. A method according to claim 4 wherein the image transfer blanket comprises a polymer layer interfacing the back surface of the image transfer portion and wherein curing at least one of the layers comprises curing the polymer layer after laminating the image transfer portion onto the body portion.

6. A method according to claim 5 wherein the polymer layer is a conductive layer.

7. A method according to claim 5 or claim 6 wherein the polymer layer is part of the body portion.

8. A method according to claim 5 or claim 6 wherein the polymer layer is part of the image transfer portion.

9. A method according to any of claims 4-7 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer and the conforming layer before laminating the image transfer portion to the body portion.

10. A method according to any of claims 4-8 wherein the image transfer portion comprises a release layer at the image transfer surface and a conforming layer and wherein curing at least one layer comprises curing the release layer and the conforming layer after laminating the image transfer portion to the body portion.

11. A method according to any of the preceding claims wherein forming the image transfer portion comprises:

coating the carrier substrate with a conforming layer.

12. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a barrier layer.

13. A method according to any of claims 1-10 wherein forming the image transfer portion comprises:

coating the carrier substrate with a conductive layer.

14. A method according to claim 13 wherein forming the image transfer portion comprises:

coating the conductive layer with a barrier layer.

15. A method according to claim 12 or claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conforming layer.

16. A method according to claim 14 wherein forming the image transfer portion comprises:

coating the barrier layer with a conductive layer.

17. A method according to claim 13 or claim 16 wherein forming the image transfer portion comprises:

coating the conductive layer with a conforming layer.

18. A method according to any of claims 9-11, 15 or 17 wherein the conforming layer comprises a plurality of layers of different hardnesses.

19. A method according to any of claims 11, 15, 17, or 18 wherein forming the image transfer portion comprises:

overcoating the conforming layer with a release layer.

20. A method according to any of the preceding claims wherein the release layer comprises a layer of condensation type silicone.

21. A method according to claim 20 wherein the condensation type silicone contains less than 4% filler material.

22. A method according to claim 20 wherein the condensation type silicone contains less than 1% filler material.

23. A method according to claim 20 wherein the condensation type silicone contains less than 0.1% filler material.

24. A method according to any of claims 20-23 wherein the release layer has a thickness of less than 1 mm.

25. A method according to any of claims 20-23 wherein the release layer is less than 200 micrometers thick.

26. A method according to any of claims 20-23 wherein the release layer is less than 100 micrometers thick.

27. A method according to any of claims 20-23 wherein the layer is less than 50 micrometers thick.

28. A method according to any of claims 20-23 wherein the layer is between about 3 and about 15 micrometers thick.

29. An image transfer member suitable for the transfer of toner images and having an outer release layer of a condensation type silicone.

30. An image transfer member according to claim 29 wherein the layer has a thickness of less than 1 mm.

31. An image transfer member according to claim 29 wherein the layer is less than 200 micrometers thick.

32. An image transfer member according to claim 29 wherein the layer is less than 100 micrometers thick.

33. An image transfer member according to claim 29 wherein the layer is less than 50 micrometers thick.

34. An image transfer member according to claim 29 wherein the layer is between about 3 and about 15 micrometers thick.

35. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 10% silicone oil.

36. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 5% silicone oil.

37. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains less than 1% silicone oil.

37. An image transfer member according to any of claims 29 to 34 wherein the outer release layer contains essentially no silicone oil.

38. A method according to any of claims 29 to 37 wherein the condensation type silicone contains less than 4% filler material.

39. A method according to any of claims 29 to 37 wherein the condensation type silicone contains less than 1% filler material.

40. A method according to any of claims 29 to 37 wherein the condensation type silicone contains less than 0.1% filler material.

41. An image transfer member according to any of claims 29 to 40 wherein the outer release layer contains added crosslinker.

42. An image transfer member according to any of claims 29 to 41 wherein the outer release layer contains added catalyst.

43. An image transfer member according to any of claims 29 to 42 wherein the outer release layer contains added conductive material.

44. An image transfer member according to any of claims 29 to 43 wherein adhesion of the outer release layer to the image transfer member is enhanced utilizing primer.

45. Apparatus for producing a multi-layered image transfer blanket including a body portion and an image transfer portion, the image transfer portion having an image transfer surface and a back surface, comprising:

a carrier substrate having the image transfer portion formed thereon such that the back surface of the image transfer portion faces the carrier substrate and is releasable therefrom; and

a moving carrier surface, in contact with a portion of the image transfer surface, which receives the image transfer portion from the carrier substrate, at a first transfer region, and laminates the image transfer portion onto the body portion, at a second transfer region, with the back surface of the image transfer portion facing the body portion.

46. Apparatus according to claim 45 and further comprising a curing device which cures at least one of the layers in said multi-layered blanket.

47. An image transfer blanket comprising:

a transfer surface adapted to receive already formed images; and

a conforming layer substantially immediately beneath the release surface which comprises a plurality of sub-layers each having a Shore A hardness of less than 80.

48. An image transfer blanket according to claim 47 wherein the sub-layers each have a shore A hardness of less than 70.

49. An image transfer blanket according to claim 47 wherein the sub-layers each have a shore A hardness of less than 60.

50. An image transfer blanket according to any of claims 47-49 wherein the sub-layers comprise at least two sub-layers, a relatively harder one of said sub-layers being situated between the release surface and a relatively softer one of said sub-layers.

51. An image transfer blanket according to claim 50 wherein the relatively softer sub-layer has a Shore A hardness of less than 42.

52. An image transfer blanket according to claim 50 wherein the relatively softer sub-layer has a Shore A hardness of less than 35.

53. An image transfer blanket according to claim 50 wherein the relatively softer sub-layer has a Shore A hardness of less than 25.

54. An image transfer blanket according to any of claims 50 to 53 wherein the relatively harder sub-layer has a Shore A hardness of greater than 42.

55. An image transfer blanket according to any of claims 50 to 53 wherein the relatively harder sub-layer has a Shore A hardness of greater than 50.

56. An image transfer blanket according to any of claims 50 to 55 wherein the ratio of thickness of the relatively hard sub-layer to the thickness of the relatively softer sub-layer is about 1:4.

57. An image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface and including a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

58. An image transfer blanket according to claim 57 wherein the supporting base layer comprises a layer of Kapton.

59. A method of producing a multi-layered image transfer blanket comprising:

forming a multi-layered image transfer portion having an image transfer surface and a supporting base layer, the base

layer being formed of a substantially non-compliant material; and

attaching the image transfer portion to a body portion including a layer of substantially resilient material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

60. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum; and

an image transfer blanket mounted on the drum, the image transfer blanket comprising:

a body portion including a layer of resilient material; and

a multi-layered transfer portion having an image transfer surface which receives the toner image and a supporting base layer which is formed of a substantially non-compliant material,

wherein the supporting base layer of the transfer portion interfaces the body portion.

61. An intermediate transfer member according to claim 60 wherein the supporting base layer comprises a layer of Kapton.

62. An intermediate transfer member, which receives a toner image from an imaging surface and from which it is subsequently transferred, comprising:

a drum;

a resilient blanket body mounted circumferentially on the surface of the drum and having a functional length;

a sheet of image transfer material having first and second ends and having a length equal to at least twice the functional length of the blanket body;

a transfer material supply member associated with the first end of the sheet; and

a transfer material take-up member associated with the second end of the sheet,

wherein an appropriate length of the sheet is stretched between the supply member and the take-up member, over the functional length of the blanket body.

63. An intermediate transfer member according to claim 62 wherein a predetermined length of used-up sheet is taken-up by the take-up member and replaced with approximately the same length of unused sheet which is supplied the supply member.

64. A carrier substrate having formed thereon a multi-layered image transfer arrangement, the image transfer arrangement comprising a back surface and an image transfer surface, wherein the back surface of the image transfer arrangement faces the carrier substrate and is removably attached thereto.